

ABSTRACT

Processes and apparatus for the treatment of product streams from mineral processing operations, including the treatment of tailings which result from oil sand processing operations. The processes and apparatus relate to the recovery of a diluent solvent from bitumen froth tailings and to the thickening of tailings from a bitumen froth stream and a middlings stream resulting from an oil sand extraction process. In one aspect the processes and apparatus relate particularly to the recycling of product streams to maximize process efficiencies. In a second aspect the processes and apparatus relate particularly to the thickening of tailings to produce an underflow component, a clarified overflow component and an unclarified overflow component.